Farmer Mathematics: Complex Numbers I

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Wahoo!

1. A certain rabbit wants to multiply $23 + 3i$ by $3 + 23i$. Help him!

2. For some reason, a botanist has $78.75 - 26.25i$ plants but only $\frac{1}{16} - \frac{i}{8}$ plant pots. How many plants per pot would he plant on average? (Problem, dimensional analysts?)

3. (a) The certain rabbit now wants to solve $x^2 - 12x + 117$. Help him!

   (b) Plot the solutions on an Argand diagram.

   (c) Draw a line between the two points and find the equation of the line.

   (d) What do you notice about the line from part (c)?

Solutions

1. $538i$

2. $420 + 420i$

3. (a) $x = 6 \pm 9i$

   (b) (show points)

   (c) (show points)

   (d) The line is completely vertical, $\Re(x)$ does not vary.